

APPENDIX D – WATERSHED AND FISH HABITAT IMPROVEMENTS

Watershed and fish habitat improvement projects are part of each alternative. The projects are designed to achieve the upward trend and soil quality requirements of the Nez Perce National Forest Plan, to achieve recovery of important habitats to ESA-listed fish and/or to meet Clean Water Act requirements, including TMDLs. A summary of projects by alternative is found below:

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Table D.1: Summary of Projects by Alternative

Project Type	American River				Crooked River				Project Total			
	B	C	D	E	B	C	D	E	B	C	D	E
Road Decommissioning (miles)	4.9	7.5	8.4	19.5	9.0	9.8	10.5	17.5	13.9	17.3	18.9	37.0
(1000\$)	46.1	71.9	80.9	152.9	66.4	73.8	70.3	117.2	112.5	145.7	151.2	270.1
Watershed Road Improvement (miles)	7.4	7.4	7.4	7.4	8.6	9.2	9.2	17.2	16	16.6	16.6	24.6
(1000\$)	13	13	13	13	33.5	43.0	52.3	100.0	46.6	56.0	65.3	113
Watershed Road Improvement (sites)	0	0	0	0	1	3	3	3	1	3	3	3
(1000\$)	0	0	0	0	10.0	11.0	11.0	11.0	10	11.0	11.0	11.0
Stream Crossing Improvement (sites)	3	3	3	9	7	7	10	25	10	10	13	34
(1000\$)	70.0	70.0	70.0	220.0	54.0	54.0	199	764.0	124.0	124.0	269.0	984.0

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Project Type	American River				Crooked River				Project Total			
	B	C	D	E	B	C	D	E	B	C	D	E
Instream Improvement (miles) (1000\$)	0	0	0	0	10.3	11.1	11.1	14.6	10.3	11.1	11.1	14.6
	0	0	0	0	182.5	222.5	222.5	737.0	182.5	222.5	222.5	737.0
Recreation and Trail Improvement (miles) (1000\$)	1.6	1.6	1.6	2.4	0.7	0.7	0.7	2.2	2.3	2.3	2.3	4.6
	8.3	8.3	8.3	12.3	7.0	7.0	7.0	14.5	15.3	15.3	15.3	26.8
Recreation and Trail Improvement (acres) (1000\$)	0	0	0	0	.1	8.1	8.1	8.1	.1	8.1	8.1	8.1
	0	0	0	0	2	52	52	52	2	52	52	52
Mine Site Reclamation (acres) (1000\$)	0	0	0	0	7	7	7	9	7	7	7	9
	0	0	0	0	15	15	15	25	15	15	15	25
Soil Restoration (acres) (1000\$)	4.4	8.1	9.6	20.4	13	18	23	37	18	26	32	58
	10.0	18.3	25.6	49.9	29.8	48.6	59.2	89.6	39.8	70.0	84.8	139.5
Grand Total Cost (1000\$)	147	182	198	448	400	527	688	1910	547	711	886	2,358

Note: Alternative D units and costs are those associated with required projects only. When additional projects are factored in, the units and costs are the same as Alternative E.

In the context of watershed improvement projects, road decommissioning applies to existing roads and can include treatments ranging from abandonment to recontouring. The selection of treatment type is based on the condition of the road, proximity to resource values such as streams, cost, and other factors. The objectives of road decommissioning are to reduce negative resource impacts and reduce maintenance costs by removing roads that are not needed for access. Most of the roads planned for decommissioning within this project were identified through a roads analysis process. Some roads were added or deleted based on field reconnaissance. These were screened with Forest and District personnel to ensure that future access needs were being met. Temporary roads constructed and decommissioned as part of this project are not considered to be watershed improvements and are not listed in this appendix.

Several roads were identified as having improvement needs due to adverse effects on aquatic resources. The proposed work would improve drainage and reduce erosion from these roads. Techniques could include adding drainage structures, shaping the road, adding rock surfacing in places, hardening fords, and revegetation. In general, roads being reconstructed primarily for timber haul purposes are not listed as watershed improvements. There are some exceptions, however, which are identified by an underscored “Y” or “N” in the alternative columns of the following tables. These exceptions consist of roads that require reconstruction or reconditioning for timber haul purposes, and the treatment activities are deemed to be a benefit to watershed health.

Stream crossing improvements are done to improve upstream passage of aquatic organisms, particularly spawning salmonids, and/or to reduce risk of culvert failure during runoff events. In some cases, culverts can be upgraded by retrofitting with baffles or other means. In other situations, they may be replaced with larger culverts or other stream crossing devices.

Instream improvements include a variety of treatments. Large woody debris (LWD) placement is done to improve aquatic habitat and restore natural function of stream systems. LWD is placed in stream reaches where there is deficiency in this habitat feature. Riparian planting is done to improve streamside shade, restore bank stability, and improve aquatic ecological function. It is done using adapted native species and can include sedges, forbs, shrubs, or trees. Maintenance generally involves improvements to existing fish habitat structures in the channel and can include floodplain enhancement adjacent to existing improvements. Channel reconstruction includes the above and often re-establishing stream meanders.

Soil restoration treats areas that have negative impacts to soil productivity or stability. Objectives of soil restoration include improvement of soil productivity and reduction of adverse effects to hydrologic function. Treatments can include soil de-compaction, recontouring of excavated skid trails and landings, replacing surface soil and organic material, stabilization of erosion features such as rills and gullies, and revegetation. The soil restoration units identified with this project are primarily associated with roads planned for decommissioning, but some legacy temporary roads are also proposed for recontouring. An estimated 1 to 6 percent of the gross stand area associated with many of the roads proposed for decommissioning would receive actual treatment.

AMERICAN RIVER

Table Notes: Alternative Codes: Y = Yes (considered in alternative), N = No (not considered in alternative); Underscore in alternative column indicates road is used as haul route, with roadwork possibly funded by a timber sale or stewardship contract.

MIDDLE AMERICAN RIVER (17060305-05-06)

Table D.2: Existing roads to be decommissioned

Road Number	Decommissioning Level	Description/Comments	Alternative				Units (miles)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
443C	Moderate reconstruction and recontour	Haul route; eroding cuts and bare travelway with poor drainage; sediment depositing into American River	Y	Y	Y	Y	0.8	\$1,740	\$1,400	M	M
								\$10,000	\$8,000		
9835	Recontour	0.5 miles within project boundary 1.0 miles in upper American.	N	N	N	Y	0.9	\$10,000	\$9,000	L	L
78480	Recontour	Ridgetop road	N	N	N	Y	0.2	\$5,000	\$1,000	L	L
78481	Recontour	Ridgetop road	N	N	N	Y	0.2	\$5,000	\$1,000	L	L
78482	Recontour	Ridgetop road. 0.12 miles in Flint Creek.	N	N	N	Y	0.18	\$5,000	\$900	L	L
78483	Recontour	Ridgetop road	N	N	N	Y	0.2	\$5,000	\$1,000	L	L

Table D.3: Instream Improvement Projects

Project Name	Stream Name	Description/Comments	Alternative				Units (miles)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
Telephone Creek – site id 100	Telephone Creek	Channel reconnect. BLM project	N	N	N	N	NA	NA	NA	M	H

Table D.4: Recreation and Trail Improvement Projects

Project Name	Location	Description/Comments	Alternative				Units (ac/mi)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
Trail #510 – site id 22	American River	Trail improvement, erosion, and crossing improvements. Decrease surface erosion and reduce sediment and impacts at stream crossing. ATV use occurring on trail closed to motorized use, except for snowmobiles. Restrict access with a physical barrier.	N	N	N	Y	0.8 mi	\$5,000	\$4,000	L	L
Telephone Creek ATV	Telephone Creek – from mouth upstream	Road-to-trail conversion. BLM project – trail extends onto FS land. Coordinate with rec/trails	N	N	N	N	NA	NA	NA		

Table D.5: Soil restoration projects

Stand Number	Adjacent Road Number	Description/Comments	Alternative				Units (acres)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
81107085	443	Recontour unclassified road and associated skid trails	N	Y	Y	Y	1.0	2260	2500	M	H
81206009	443C	Recontour skid trail and landing	Y	Y	Y	Y	.3	2260	700		M
81206009	443C	Recontour skid trail	Y	Y	Y	Y	.5	2260	1100		M
81107088	78480	Recontour skid trail	N	N	N	Y	.2	2260	500		L
81206007	78481	Recontour 2 landings	N	N	N	Y	.4	2260	900		L
81206049	78483	Recontour skid trail	N	N	N	Y	.3	2260	700		L
81207018	78550	Recontour 2 skid trails	N	N	N	Y	.6	2260	1400		M
81207005	9812F	Recontour skid trail	N	N	N	Y	.1	2260	300		M
81107010	9835	Recontour skid trail	N	N	N	Y	.2	2260	500		L

UPPER AMERICAN RIVER (17060305-05-09)

Table D.6: Existing roads to be decommissioned

Road Number	Decommissioning Level	Description/Comments	Alternative				Units (miles)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
9835	Recontour	0.5 miles within project boundary; 0.9 miles in middle American.	N	N	N	Y	1.0	\$10,000	\$10,000		

EAST FORK AMERICAN RIVER (17060305-05-10)

Table D.7: Existing roads to be decommissioned

Road Number	Decommissioning Level	Description/Comments	Alternative				Units (miles)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
9812E	Recontour	Ridgetop road	N	N	N	Y	1.0	\$5,000	\$5,000	L	L
9812E1	Recontour	Ridgetop road					0.1	\$5,000	\$500	L	L
78526	Recontour	This road is trashed with saturated template. In old harvest unit; cut and fill failures exist. Accesses private land and will require coordination with landowner.	N	N	N	Y	0.15	\$10,000	\$1,500	M	M

Table D.8: Stream crossing improvements

Road Number	Crossing Number	Stream	Description/Comments	Alternative				Units (sites)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
				B	C	D	E					
1810	811	East Fork American	48" culvert with 20' fill; recommend upgrade by adding baffles for aquatic organism passage	N	N	N	Y	1	\$15,000	\$15,000	L	L
Private	1005	East Fork American	72" culvert with 6" fill, partial fish barrier, BLM project, connected action	N	N	N	N	1				

Table D.9: Soil restoration projects

Stand Number	Adjacent Road Number	Description/Comments	Alternative				Units (acres)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
81205076	9812E	Recontour 2 landings	N	N	N	Y	.4	2260	1000		L

KIRKS FORK (17060305-05-11)

Table D.10: Existing roads to be decommissioned

Road Number	Decommissioning Level	Description/Comments	Alternative				Units (miles)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
1810C	Moderate reconstruction and recontour	Gullied road with little or no drainage; restore riparian function; first 0.69 miles to be reconstructed and maintained, last 0.23 miles to be decommissioned	Y	Y	Y	Y	0.23	\$10,000	\$2,300	H	M
1810E	Recontour		Y	Y	Y	Y	0.33	\$10,000	\$3,300	M	M
9832A	Maintenance and Recontour	Haul route; road vegetated and drivable, but not needed for future. Decommission from stream crossing.	Y	Y	Y	Y	1.42	\$1,740	\$2,500	H	H
							0.21	\$10,000	\$2,100		
77328	Recontour	Need to coordinate access needs with BLM, though it may not be used for Eastside Township project. Last one out recontours the road.					0.33	\$10,00	\$3,300	H	H

Table D.11: Watershed road improvements

Road Number	Improvement Level	Description/Comments	Alternative				Units (miles)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
9832	Maintenance	Improve drainage on first 0.1 miles (in lower American River); repair or remove 2 failing culverts near end of road (in Kirks Fork); Haul route. Alt E treats only 1 st 0.7 miles. Road is also proposed for haul under Red Pines EIS	Y	Y	Y	Y	4.0	\$250	\$1,000	M	M

Table D.12: Stream crossing improvements

Road Number	Crossing Number	Stream	Description/Comments	Alternative				Units (sites)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
				B	C	D	E					
1810B	873	Unnamed trib to Kirks Fork	30" culvert with 10' fill; recommend larger pipe for hydraulics	N	N	N	Y	1	\$10,000	\$10,000	L	L

Table D.13: Recreation and Trail Improvement Projects

Project Name	Location	Description/Comments	Alternative				Units (ac/mi)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
Trail #846 – site id 23	Kirks Fork	ATV trail should be evaluated for possible improvement needs. Coordinate with BLM.	Y	Y	Y	Y	1.16 miles	5000	\$5,800	L	M

Table D.14: Soil restoration projects

Stand Number	Adjacent Road Number	Description/Comments	Alternative				Units (acres)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
81602063	1810	Recontour skid trail	N	N	N	Y	.3	2260	700		M
81602066	1810	Recontour skid trail	N	N	N	Y	.5	2260	1100		M
81605021	77326	Recontour landing	N	N	N	Y	.2	2260	500		M
81605019	77328	Recontour 2 landings	Y	Y	Y	Y	.4	2260	1000		H
81605005	9832A	Recontour skid trail	Y	Y	Y	Y	.5	2260	1100		H

WHITAKER CREEK (17060305-05-12)

Table D.15: Existing roads to be decommissioned

Road Number	Decommissioning Level	Description/Comments	Alternative				Units (miles)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
78485	Recontour						0.52	\$5,000	\$2,600	M	H
78525	Varied	Road borders old plantation, several skid trail throughout	N	Y	Y	Y	0.12	\$5,000	\$600	L	M

Table D.16: Watershed road improvements

Road Number	Improvement Level	Description/Comments	Alternative				Units	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
1809B	Moderate reconstruction	Ditched, but some ponding; 2 low risk culverts should be removed; failed log culvert; 0.62 miles to be used for haul	Y	Y	Y	Y	0.62 mi	\$1,000	\$620	L	L
1809B	Minor reconstruction	Non-haul route – see comments above.	Y	Y	Y	Y	1.28 miles	\$2,000	\$2,560	L	L
1809C	Major Reconstruction	Ongoing erosion due to failing drainage. Planned for use under BLM Eastside township project. Coordinate w/ BLM	Y	Y	Y	Y	0.78	\$10,000	\$7,800	M	H

Table D.17: Stream crossing improvements

Road Number	Crossing Number	Stream	Description/Comments	Alternative				Units (Sites)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
				B	C	D	E					
1809	890	Unnamed trib to Whitaker Creek	24" culvert with 20' fill; replace with larger pipe for hydraulics and possible fish passage	N	N	N	Y	1	\$20,000	\$20,000	L	L
1809C	884	Whitaker Creek	Replace failing log culvert; to be used by BLM	Y	Y	Y	Y	2	\$10,000	\$20,000	M	H

Table D.18: Instream Improvement Projects

Project Name	Stream Name	Description/Comments	Alternative				Units (miles)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
Whitaker Creek – site id 101	Whitaker Creek	Channel reconnect, wetland restoration. BLM project	N	N	N	N	NA	NA	NA	M	H

Table D.19: Soil restoration projects

Stand Number	Adjacent Road Number	Description/Comments	Alternative				Units (acres)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
81307014	1809B1	Recontour unclassified road, trail, and landing	N	Y	Y	Y	1.2	2260	2260	M	H
81307002	78485	Recontour skid trail	Y	Y	Y	Y	.3	2260	700		H
81303002	78525	Recontour skid trail	Y	Y	N	Y	.1	2260	300		H

QUEEN CREEK (17060305-05-13)**Table D.20: Existing roads to be decommissioned**

Road Number	Decommissioning Level	Description/Comments	Alternative				Units (miles)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
1809A	Moderate reconstruction and recontour	Haul route alts C & D.	N	Y	Y	Y	0.92	\$3,800	\$3,500	M	H
								\$10,000	\$9,200		
1810D	Recontour	Gullied road with little or no drainage; restore riparian function	N	Y	Y	Y	0.8	\$10,000	\$8,000	M	H
78486	Recontour		N	Y	Y	Y	0.5	\$10,000	\$5,000	M	H
78487	Recontour		N	N	Y	Y	0.1	\$10,000	\$1,000	L	M
78488	Recontour		N	N	Y	Y	0.2	\$10,000	\$2,000	L	M
78489	Recontour	Ridgetop road	N	N	N	Y	0.4	\$5,000	\$2,000	L	L
78489A	Recontour	Ridgetop road	N	N	N	Y	0.2	\$5,000	\$1,000	L	L
78489B	Recontour	Ridgetop road	N	N	N	Y	0.15	\$5,000	\$750	L	L

Table D.21: Stream crossing improvements

Road Number	Crossing Number	Stream	Description/Comments	Alternative				Units (sites)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
				B	C	D	E					
1809	977	Queen Creek	36" culvert with 25' fill; seepy site; possible replacement for hydraulics and fish passage; haul route	N	N	N	Y	1	\$50,000	\$50,000	L	M
1809	1090	Unnamed trib to Queen Creek	36" culvert with 20' fill; possible replacement for hydraulics and fish passage; haul route	N	N	N	Y	1	\$50,000	\$50,000	L	M

Table D.22: Instream Improvement Projects

Project Name	Stream Name	Description/Comments	Alternative				Units (miles)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
Queen Creek – site id 102	Queen Creek	Channel reconnect, wetland restoration. BLM project	N	N	N	N	NA	NA	NA	M	H

Table D.23: Soil restoration projects

Stand Number	Adjacent Road Number	Description/Comments	Alternative				Units (acres)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
81307013	1809A	Recontour skid trails	N	N	Y	Y	.6	2260	1500		H
81307014	1809B1	Recontour skid trail	N	N	N	Y	.4	2260	900		M
81308003	1810	Recontour skid trail	N	N	N	Y	.5	2260	1100		M
81308037	1810A	Recontour road to rock pit	N	N	Y	Y	.5	2260	1100		M
81308003	1810D	Recontour skid trail	N	Y	Y	Y	.2	2260	500		H
81308003	1810D	Recontour skid trail	N	Y	Y	Y	.3	2260	700		H
81308003	1810D	Recontour skid trail	N	Y	Y	Y	.8	2260	1800		H
81308007	78489	Recontour skid trail	N	N	N	Y	.2	2260	500		L
81308002	78489A	Recontour skid trail	N	N	N	Y	.2	2260	500		H

FLINT CREEK (17060305-05-14)

Table D.24: Existing roads to be decommissioned

Road Number	Decommissioning Level	Description/Comments	Alternative				Units (miles)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
443F	Recontour	Ridgetop road	N	N	N	Y	0.9	\$5,000	\$4,500	L	L
1125B	Recontour	Ridgetop road	N	N	N	Y	0.2	\$5,000	\$1,000	L	L
1125B1	Recontour	Ridgetop road	N	N	N	Y	0.1	\$5,000	\$500	L	L
9807A	Recontour	Ridgetop road. Includes soil restoration	N	N	N	Y	0.4	\$5,000	\$2,000	L	L
9807A1	Recontour	Ridgetop road	N	N	N	Y	0.4	\$5,000	\$2,000	L	L
9807B	Maintenance and Recontour	Most of road is to be maintained, but recommend decommissioning end of road in existing clearcut (~0.6 mi). Road is 2.2 miles long	N	Y	Y	Y	0.6	\$10,000	\$6,000	M	H
9807B1	Recontour	Ridgetop road	N	N	N	Y	0.04	\$5,000	\$200	L	L
9812A	Moderate Reconstruction and Recontour	Haul route, followed by decommissioning; first 0.25 mi used for haul in alts B & E; entire road used for haul alt C & D; the 1 st 0.72 miles rd. in fairly good condition; at Saddle Rd becomes more vegetated, eroding cut & fill slopes pose threat to mass wasting into trib of American River.	Y	Y	Y	Y	0.95	\$1,130	\$1,100	M	H
								\$10,000	\$9,500		
9812B	Recontour	Ridgetop road	N	N	N	Y	1.0	\$5,000	\$5,000	L	L
9812C	Recontour	Ridgetop road	N	N	N	Y	0.41	\$5,000	\$2,050	L	L
9812D	Recontour	Has plugged culverts	N	N	N	Y	1.25	\$10,000	\$12,500	L	M
9812F	Moderate Reconstruction and Recontour	Haul route; ridgetop road holding water; soils are compacted, and productivity low; decompact to increase soil productivity, reduce mass wasting. Used for BLM Eastside Township project	Y	Y	Y	Y	0.7	\$2,950	\$2,100	L	M
								\$10,000	\$7,000		
9812F1	Major Reconst. and Recontour	Same as 9812F. Used for BLM Eastside township project.	Y	Y	Y	Y	0.2	\$3,480	\$700	L	M
								\$10,000	\$2,000		
9812G	Recontour	Ridgetop road	N	N	N	Y	0.3	\$5,000	\$1,500	L	L
9812H	Recontour	Ridgetop road	N	N	N	Y	0.6	\$5,000	\$3,000	L	L
9834B	Recontour	Ridgetop road	N	N	N	Y	0.2	\$5,000	\$1,000	L	L
78482	Recontour	Ridgetop road. 0.18 miles in Middle American	N	N	N	Y	0.12	\$5,000	\$600	L	L
78586	Major reconst and recontour	Ridgetop road.	N	N	N	Y	0.5	\$2,270	\$1,100	L	L
								\$5,000	\$2,500		
78587	Reconstruct and Recontour	Road not used in alt C.	Y	N	Y	Y	0.6	\$3,480	\$2,100	L	L
								\$10,000	\$6,000		

Table D.25: Stream Crossing Improvements

Road Number	Crossing Number	Stream	Description/Comments	Alternative				Units (sites)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
				B	C	D	E					
9812	766	Unnamed trib to Flint Creek	~30" culvert with 50% scour line; recommend replacement for hydraulics and accommodating fish passage; haul route	Y	Y	Y	Y	1	\$50,000	\$50,000	M	H

Table D.26: Soil restoration projects

Stand Number	Adjacent Road Number	Description/Comments	Alternative				Units (acres)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
81202027	1125	Recontour landing	N	N	N	Y	.2	2260	500		H
81202027	1125B	Recontour landing	N	N	N	Y	.2	2260	500		H
81202027	1125B1	Recontour landing	N	N	N	Y	.2	2260	500		H
81206001	78482	Recontour skid trail	N	N	N	Y	.6	2260	1300		M
81202003	9807	Recontour skid trail	Y	Y	Y	Y	.4	2260	900		M
81202008	9807A	Recontour landing	Y	Y	Y	Y	.2	2260	500	L	L
81202031	9807B	Recontour landing	N	Y	Y	Y	.2	2260	500		H
81205028	9812	Recontour skid trail	Y	Y	Y	Y	.6	2260	1400		H
81205030	9812A	Recontour skid trail	Y	Y	Y	Y	.1	2260	300		H
81205083	9812A	Recontour skid trail	Y	Y	Y	Y	.3	2260	700		H
81205027	9812B	Recontour road extension	N	N	N	Y	.8	2260	1700		H
81205026	9812C	Recontour 2 skid trails	N	N	N	Y	.6	2260	1400		H
81205024	9812D	Recontour 3 skid trails	N	N	N	Y	.9	2260	2200		H
81205031	9812D	Recontour 2 skid trails	N	N	N	Y	.6	2260	1400		H
81207004	9812F1	Recontour skid trail	Y	Y	Y	Y	.3	2260	700		H
81203001	9812H	Recontour skid trail	N	N	N	Y	.3	2260	700		H
81203008	9812H	Recontour landing	N	N	N	Y	.2	2260	500		H
81204001	9834	Recontour skid trail	N	N	N	Y	.4	2260	900		M
81204009	9834	Recontour landing	N	N	N	Y	.2	2260	500		M

BOX SING CREEK (17060305-05-15)

Table D.27: Existing roads to be decommissioned

Road Number	Decommissioning Level	Description/Comments	Alternative				Units (miles)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
78516	Recontour	Mid-slope road	N	Y	Y	Y	0.20	\$10,000	\$2,000	L	M
78517	Recontour	Mid-slope road	N	Y	Y	Y	0.10	\$10,000	\$1,000	L	M

Table D.28: Watershed road improvements

Road Number	Improvement Level	Description/Comments	Alternative				Units (miles)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
1810C	Moderate reconstruction	Haul route; 1' deep ruts in road. Decommission 0.23 mi in Kirks Fork.	Y	Y	Y	Y	0.69	\$1,500	\$1,035	M	H

Table D.29: Stream Crossing Improvements

Road Number	Crossing Number	Stream	Description/Comments	Alternative				Units (sites)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
				B	C	D	E					
1810	1028	Box Sing	24" pipe w/ 10' fill; 50% scour line; replace for hydraulics	N	N	N	Y	1	\$5,000	\$5,000	L	L

Table D.30: Recreation and Trail Improvement Projects

Project Name	Location	Description/Comments	Alternative				Units (ac/mi)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
Trail 830 and 807 crossings – site id 20	Junction with road trail 807 and Trail 810 crossings on Box Sing Creek	Crossing on Box Sing Creek in poor condition; decrease sediment into Box Sing Creek. Trail up Box Sing Creek needs recreation use management prescription.	Y	Y	Y	Y	0.5 mi	\$5,000	\$2,500	M	H

Table D.31: Soil restoration projects

Stand Number	Adjacent Road Number	Description/Comments	Alternative				Units (acres)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
81308001	1810	Recontour skid trail	N	N	N	Y	.3	2260	700		L
81308020	1810A	Restore rock pit	N	N	Y	Y	.5	10000	5000		M
81308031 81308002	78489	Recontour 3 skid trails	N	N	N	Y	.7	2260	1700		M

LOWER AMERICAN RIVER (17060305-05-16)

Table D.32: Soil restoration projects

Stand Number	Adjacent Road Number	Description/Comments	Alternative				Units (acres)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
81708025	9832A	Recontour skid trail	Y	Y	Y	Y	.2	2260	500		L
81708044	9832A	Restore landing	Y	Y	Y	Y	.2	2260	500		L

CROOKED RIVER

LOWER CROOKED RIVER (17060305-03-01)

Table D.33: Existing roads to be decommissioned

Road Number	Decommissioning Level	Description/Comments	Alternative				Units (miles)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
522F1	Recontour	Includes soil restoration	N	N	N	Y	0.40	\$5,000	\$2,000	L	L
9816F	Recontour	Ridgetop road. Starts in Red River	N	N	N	Y	0.61	\$5,000	\$3,050	L	L
9847	Reconstruct & Recontour	Wet draws pose threat to mass wasting into Crooked River. Haul route.	Y	Y	Y	Y	1.30	\$1,000	\$1,300	M	H
								\$10,000	\$13,000		
78404	Recontour	Ridgetop road. 1 st 0.26 mi outside proj area	N	N	N	Y	0.7	\$5,000	\$3,500	L	L
78405	Recontour	Ridgetop road.	N	N	N	Y	0.2	\$5,000	\$1,000	L	L
78406	Recontour	Ridgetop road. Most of road outside proj area.	N	N	N	Y	0.1	\$5,000	\$500	L	L
78407	Recontour	Ridgetop road.	N	N	N	Y	0.1	\$5,000	\$500	L	L
78532	Recontour		N	N	N	Y	0.5	\$10,000	\$5,000	L	L
78533	Recontour	Outside analysis area boundary – used by BLM in Whiskey South; coord decom by BLM.	N	N	N	Y	0.2	\$10,000	\$4,000	L	L

Table D.34: Watershed Road Improvements

Road Number	Improvement Level	Description/Comments	Alternative				Units	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
233	Minor Reconstruction	County road – the “narrows”. Spot treatment. See also Crooked River “narrows” in-stream improvement projects. MP 2.56 to 6.06	N	N	N	Y	3.5 miles	\$15,000	\$52,500	M	M
1110	Minor Reconstruction	Aggregate surfacing and ditch rock, cutslope revegetation. Haul route. 2-3 locations over length of rd – approx 0.3 mi total. From mp 4.83 to mp 5.13	Y	Y	Y	Y	0.3 miles	\$15,000	\$4,500	M	M
9831	Maintenance	Drainage improvement, cutslope stabilization. MP 1.07 to 1.13.	Y	Y	Y	Y	0.06 miles	\$80,000	\$4,800	M	M

Table D.35: Stream Crossing Improvements

Road Number	Crossing Number	Stream	Description/Comments	Alternative				Units (sites)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
				B	C	D	E					
233	1665	Unnamed trib to Crooked R	County road. Replace culvert for hydraulics; low fill height; Approx MP 2.3.	N	N	N	Y	1	\$20,000	\$20,000	M	M
233	1548	Unnamed trib to Crooked R	County road. Replace culvert for hydraulics.	N	N	N	Y	1	\$20,000	\$20,000	M	M
9805	1935	Sec 14 trib to Crooked R	48” culvert; 10’ fill height. Add baffles for fish passage (possible replacement)	N	N	N	Y	1	\$15,000	\$15,000	L	L
9805	1959	Sec 14 trib to Crooked R	48” culvert; 10’ fill height. Add baffles for fish passage (possible replacement)	N	N	N	Y	1	\$15,000	\$15,000	L	L
9805	1967	Sec 14 trib to Crooked R	48” culvert; 10’ fill height. Add baffles for fish passage (possible replacement)	N	N	N	Y	1	\$15,000	\$15,000	L	L
9831	1702	Unnamed trib to Crooked River	30” culvert; 10’ fill height. Replacement for hydraulics, remove debris below outlet	N	N	N	Y	1	\$20,000	\$20,000	L	L

Table D.36: Instream Improvement Projects

Project Name	Stream Name	Description/Comments	Alternative				Units (miles)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
Lower Crooked River forced meanders – site id 1	Crooked River	Riparian planting and maintenance of existing improvements.	Y	Y	Y		3.2	\$10,000	\$32,000	H	H
						Y	3.2	\$20,000	\$64,000		
Lower Crooked River narrows – site id 2	Crooked River	Riparian planting & bioengineering to improve habitat and road-stream interactions; reestablish sinuosity in select areas – see also Crooked River “narrows” under watershed road improvements.	N	N	N	Y	3.5	\$50,000	\$175,000	M	M
Lower Crooked River narrows to Relief Creek – site id 3	Crooked River	Riparian planting and maintenance of existing improvements.	Y	Y	Y		1.7	\$25,000	\$42,500	H	H
						Y	1.7	\$50,000	\$85,000		

Table D.37: Soil Restoration Projects

Stand Number	Adjacent Road Number	Description/Comments	Alternative				Units (acres)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
82201170	1110	Recontour trail and landing	N	N	N	Y	.4	2260	900		M
82201022	1110B	Recontour landing	N	N	N	Y	.2	2260	500		L
82201022	1110B	Recontour skid trail	N	N	N	Y	.3	2260	700		L
82201093	1110B	Recontour road extension	N	N	N	Y	.5	2260	1100		L
82201133	1110F	Recontour skid trail	N	N	N	Y	.4	2260	900		M
82201130	1110H	Recontour skid trail	N	N	N	Y	.2	2260	500		M
82101064	522F1	Recontour landing	N	N	N	Y	.2	2260	500		L
82201011	77329A	Recontour skid trail	N	N	N	Y	.2	2260	500		M
82001040	78533	Recontour temp road and skid trail	N	N	N	Y	.8	2260	1800		M
82203083	9804	Recontour skid trail	N	N	Y	Y	.2	2260	300		M
82203084	9804	Recontour skid trail	N	N	Y	Y	.6	2260	1400		M
82203085	9804	Recontour 2 skid trails	N	N	Y	Y	.3	2260	700		M

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Stand Number	Adjacent Road Number	Description/Comments	Alternative				Units (acres)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
82203087	9804	Recontour 2 landings	N	N	Y	Y	1.2	2260	2700		M
82203057	9804	Recontour skid trail/old mine road	N	Y	Y	Y	.9	2260	2100		H
82203080	9805	Recontour skid trail	N	N	N	Y	.5	2260	1100		H
82203003	9805A	Recontour landing	N	N	N	Y	.2	2260	500		H
82101061	9816	Recontour skid trails	N	N	Y	Y	1.0	2260	2260		M
82001134	9816F	Recontour skid trail	N	N	N	Y	.7	2260	1600		H
82001131	9831	Recontour skid trail	N	N	N	Y	.2	2260	500		L
82001117	9831	Recontour skid trails and landing	N	N	N	Y	.4	2260	900		L
82001042	9831	Recontour landing	N	N	N	Y	.2	2260	500		L
82201135	9844	Recontour 2 skid trails	N	N	N	Y	.4	2260	900		L
82202049	9844	Recontour skid trail	N	N	N	Y	.2	2260	500		L
82101027	9847	Recontour landing	N	N	N	Y	.2	2260	500		M
82101007	9847	Recontour skid trail	N	Y	Y	Y	.1	2260	300		H
82202098	9850	Recontour skid trail	N	N	N	Y	.1	2260	300		L
82101057	9870A	Recontour skid trail	N	N	N	Y	.2	2260	500		L

RELIEF CREEK (17060305-03-03)

Table D.38: Roads to be decommissioned

Road Number	Decommissioning Level	Description/Comments	Alternative				Units (miles)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
522 B1	Reconstruct/ recontour	This road will be reconstructed for haul in Alt C and D. Planned for decommissioning, but might be used to replace portion of 522B.	Y	Y	Y	Y	1.10	\$1,150	\$1,300	M	H
								\$10,000	\$11,000		
522J	Recontour	Road is ponded and located in riparian zone on Relief Creek. Road is 0.2 mi long; first 0.1 mi to be maintained, remainder recontoured .	Y	Y	Y	Y	.10	\$10,000	\$1,000	M	H
78496A	Recontour	Ridgetop road. NEPA coverage in Red River Salvage. Road starts in Red River, including, additional	Y	Y	Y	Y	0.2	\$5,000	\$1,000	L	L

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Road Number	Decommissioning Level	Description/Comments	Alternative				Units (miles)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
		INFRA mileage									
78496B	Recontour	Same as 78496A	Y	Y	Y	Y	0.3	\$5,000	\$1,500	L	L
78496B1	Recontour	Same as 78496A	Y	Y	Y	Y	0.2	\$10,000	\$2,000	M	H
78496C	Recontour	Same as 78496A	Y	Y	Y	Y	0.3	\$5,000	\$1,500	L	L
78497	Varied	Ridgetop road. Road is compacted, but in generally good condition with effective water bars. Decompaction would increase soil productivity	N	N	N	Y	1.1	\$5,000	\$5,500	L	L
78497A	Recontour	Ridgetop road. Same as 78496A	N	N	N	Y	0.2	\$5,000	\$1,000	L	L
78497B	Recontour	Ridgetop road.	N	N	N	Y	0.4	\$5,000	\$2,000	L	L
78497B1	Recontour	Ridgetop road.	N	N	N	Y	0.2	\$5,000	\$1,000	L	L
78498	Recontour		N	N	N	Y	.40	\$10,000	\$4,000	L	M
78499	Abandon	Reclaimed by landscape, trees and shrubs could be planted	Y	Y	Y	Y	.70	\$1,000	\$700	L	M
78499A	Abandon	Same as 78499	Y	Y	Y	Y	.5	\$1,000	\$500	L	M
78499A1	Abandon	Same as 78499	Y	Y	Y	Y	.20	\$1,000	\$200	L	M
78500	Recontour		Y	Y	Y	Y	.30	\$10,000	\$3,000	M	H
78511	Recontour	Ridgetop road.	N	N	N	Y	0.1	\$5,000	\$500	L	L
78512	Recontour	Ridgetop road.	N	N	N	Y	0.2	\$5,000	\$1,000	L	L
78513	Recontour	Streamside encroachment	Y	Y	Y	Y	.50	\$10,000	\$5,000	M	H
78514	Recontour	0.8 miles in Middle Crooked	N	N	Y	Y	0.2	\$5,000	\$1,000	L	L
78539	Varied	Major reconstruction for haul route, followed by decommissioning	Y	Y	Y	Y	.20	\$4,280	\$900	M	H
								\$10,000	\$2,000		
78540	Partial recontour		Y	Y	Y	Y	.26	\$10,000	\$2,600	M	H

Table D.39: Watershed Road Improvements

Road Number	Improvement Level	Description/Comments	Alternative				Units	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
522	Maintenance	Add ~10 cross-drains, ~0.5 mi ditch rock and possibly revegetate cutslopes pending further analysis. From mp 4.87 to mp 5.5.	N	Y	Y	Y	0.63 mi	\$15,000	\$9,450	M	H
522B	Moderate reconstruction	Road has poor drainage and is heavily rutted; drain and grade and close during wet season or obliterate to reduce sediment; also covered under Red River Salvage EA. 0.56 miles of 522B are located in Deadwood Creek - 1.70 miles in Relief Creek. MP 2.07 to 2.2 used for haul in Alts B, C, and E.	Y	Y		Y	2.2 mi	\$4,400	\$9,680	M	M
	Major reconstruction	MP 1.32 to 2.2 is major reconstruction for haul in Alt D.			Y		0.88	\$15,000	\$13,200		
	Moderate reconstruction						1.32	\$4,400	\$5,800		
9837	Maintenance	Road needs immediate maintenance attention; planned for haul route. Active cut sloughing on upper slope road. Watershed improvement recommended on 0.57 miles (mp 1.23 to mp 1.8), road is 3.2 miles long.	Y	Y	Y	Y	0.57 mi	\$1,500	\$900	M	H
9839	Maintenance	Decrease mass wasting into Relief Creek. Active cut slumping onto road with seepage at approx MP 0.2 and 0.3 (from mp 0.2 to mp 0.7). Road is 1.2 mi long.	Y	Y	Y	Y	0.5 mi	\$2,000	\$1,000	M	M
9859	Moderate reconstruction	Road used for private land access; remove log culverts on steep side slopes; sediment delivery to Relief Creek; Road is 1.05 mi long; see also crossing no 1964 stream crossing improvements. Further coord w/ temp rd access between draft & final.	Y	Y	Y	Y	0.45 mi	\$3,000	\$1,350	M	H

Road Number	Improvement Level	Description/Comments	Alternative				Units	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
9876 – site id 1	Temporary stabilization (i.e. road storage)	Site at mp 1.43. Pull back fill at stream crossing to restore hydrologic function. See also crossing nos. 1907 & 1926.	N	Y	Y	Y	1 sites	\$500	\$500	M	H
9876 – site id 2	Temporary stabilization (i.e. road storage)	Site at mp 2.16. Pull back fill at stream crossing to restore hydrologic function. See also crossing nos. 1907 & 1926.	N	Y	Y	Y	1 sites	\$500	\$500	M	H

Table D.40: Stream crossing improvements

Road Number	Crossing Number	Stream	Description/Comments	Alternative				Units (sites)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
				B	C	D	E					
1803	1969	East Fork Relief Creek	Replace 48" culvert for fish passage	N	N	N	Y	1	\$100,000	\$100,000	M	H
1803	2024	Unnamed trib to Relief Creek	24" culvert with 30' fill depth; replacement for hydraulic capacity; check for aquatic organism passage.	N	N	N	Y	1	\$20,000	\$20,000	L	M
1803	2055	Unnamed trib to Relief Creek	30" culvert with 30' fill depth; replacement for hydraulic capacity and fish passage; scour line 50%+; good habitat above.	N	N	N	Y	1	\$60,000	\$60,000	M	M
1803	2212	Unnamed trib to Relief Creek	24" culvert; 30' fill; limited habitat above; steep A channel. Replacement for hydraulic capacity; check for aquatic organism passage.	N	N	N	Y	1	\$30,000	\$30,000	L	L
1803	2234	Unnamed trib to Relief Creek	24" culvert with 20' fill; replace with larger pipe for hydraulic capacity; pipe needs maintenance.	N	N	Y	Y	1	\$20,000	\$20,000	M	M

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Road Number	Crossing Number	Stream	Description/Comments	Alternative				Units (sites)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
				B	C	D	E					
1803	2241	Relief Creek	Replace 48" culvert for fish passage	N	N	Y	Y	1	\$120,000	\$120,000	H	H
9837	2213	Unnamed trib to Relief Creek	18" culvert with 10' fill; no fish & little water above; probable replacement with larger pipe for hydraulic capacity; road needs maintenance	N	N	N	Y	1	\$5,000	\$5,000	L	L
9859	1964	E Fk Relief Cr	Remove failing log bridge and consider replacing with hardened ford for private land access; potential cost share; see also watershed road improvements.	Y	Y	Y	Y	1	\$10,000	\$10,000	H	H
9876	1907	Unnamed trib to Relief Creek	Crossing removed, but encroaching fill remains; restore stream channel, floodplain, and wetland. Spot treatments on road before crossing location – see watershed road improvement treatments above.	Y	Y	Y	Y	1	\$2,000	\$2,000	L	M
9876	1926	Unnamed trib to Relief Creek	Same as #1907	Y	Y	Y	Y	1	\$2,000	\$2,000	L	M

Table D.41: Instream improvement projects

Project Name	Stream Name	Description/Comments	Alternative				Units (miles)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
Relief Creek Instream Improvement – site id 4	Relief and East Fork Relief Creeks	Streamside planting in old harvest units and mined areas; Large woody debris placement; existing structure maintenance.	Y	Y	Y	N	1.6	\$7,500	\$12,000	M	H
			N	N	N	Y	1.1				
Relief Creek Instream Improvement – site id 5	Relief and East Fork Relief Creeks	Streamside planting in old harvest units and mined areas; Large woody debris placement; existing structure maintenance. Adds channel sinuosity restoration & flood plain restoration to 0.5 mile of site id 4.	N	N	N	Y	0.5	\$150,000	\$75,000	M	M

Table D.42: Soil Restoration

Stand Number	Adjacent Road Number	Description/Comments	Alternative				Units (acres)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
82104025	1803	Recontour landing	N	N	N	Y	.3	2260	700		L
82102024	1803	Recontour trail	N	N	N	Y	.2	2260	500		L
82103004	1803	Recontour trails and landing	N	N	Y	Y	1.3	2260	2900		M
82104069	1803	Partial stabilization of rock pit	N	Y	Y	Y	1.0	10,000	10,000		M
82104094	1803	Recontour skid trail	N	N	N	Y	.2	2260	500		L
82102032	522B	Recontour skid trail	Y	Y	Y	Y	.6	2260	1400		H
82102001	522B	Recontour skid trail	N	N	N	Y	.1	2260	300		M
82102001	522B	Recontour skid trail	N	N	N	Y	.4	2260	900		M
82102038	522B1	Recontour skid trail	Y	Y	Y	Y	.3	2260	700		H
82102001	522B1	Recontour skid trail	Y	Y	Y	Y	.3	2260	700		H
82102001	522B1	Recontour skid trail	Y	Y	Y	Y	.2	2260	500		H
82102004	78497	Recontour landing	Y	Y	Y	Y	.2	2260	500		H
82102005	78497B	Recontour skid trail	Y	Y	Y	Y	.2	2260	500		H
82102003	78500	Recontour skid trail	Y	Y	Y	Y	.4	2260	900		H
82102001	78511	Recontour landing	Y	Y	Y	Y	.2	2260	500		H
82105034	78539	RECONTOUR SKID TRAILS	Y	Y	Y	Y	.4	2260	1000		H
82104001	9836A	Recontour landing	Y	Y	Y	Y	.5	2260	1100		M
82104001	9836A	Recontour skid trail	Y	Y	Y	Y	.1	2260	300		M
82105008	9837	Recontour skid trail	Y	Y	Y	Y	.5	2260	1100		M

Stand Number	Adjacent Road Number	Description/Comments	Alternative				Units (acres)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
82105011	9837	Recontour skid trail	Y	Y	Y	Y	.2	2260	500		H
82105037	9837	Recontour skid trail	Y	Y	Y	Y	.5	2260	1100		H
82104013	9837	Recontour 2 skid trails	Y	Y	Y	Y	.6	2260	1500		H
82104047	9855A	Landing and skid trail decompaction	Y	Y	Y	Y	.6	2260	1300		M
82104090	9855A	Landing and skid trail decompaction	Y	Y	Y	Y	.6	2260	1300		M
82103002	9856A	Recontour skid trail	Y	Y	Y	Y	.3	2260	600		M
82103001	9857	Recontour skid trail	Y	Y	Y	Y	.4	2260	900		M
82103001	9857	Recontour skid trail	Y	Y	Y	Y	.1	2260	300		M
82103001	9857	Recontour temp road and landing	Y	Y	Y	Y	.7	2260	1600		H
82102003	9876	Recontour skid trail	Y	Y	Y	Y	.3	2260	700		M
82102023	9876	Recontour skid trail	Y	Y	Y	Y	.4	2260	900		M

MIDDLE CROOKED RIVER (17060305-03-04)

Table D.43: Roads to be decommissioned

Road Number	Decommissioning Level	Description/Comments	Alternative				Units (miles)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
9833	Recontour	Decommission last 1.4 miles; total road length 3.3 miles.	Y	Y	N	Y	1.6	\$10,000	\$16,000	H	H
9836	Road to trail conversion	Road to trail conversion from Crooked River to ~4700' elev. Maintain rd width for snowmobile groomer. Trail to remain open for motorized trail vehicles.	Y	Y	Y	Y	1.46	\$5,000	\$7,350	H	H
9836B	Recontour	DECOMMISSION FROM CROSSING 2285 TO END OF ROAD	N	Y	Y	Y	0.24	\$10,000	\$2,400	M	H
9836B1	Recontour	Road parallels small intermittent stream	N	Y	Y	Y	0.1	\$10,000	\$1,000	M	H
9836C	Varied	C road parallels B road entrance camo'd w/slash pile. Decrease potential mass wasting into Silver Cr.	N	Y	Y	Y	0.4	\$10,000	\$4,000	M	H
78514	Recontour	0.2 miles in Relief Creek	N	N	Y	Y	0.8	\$5,000	\$4,000	L	L
78534	Recontour		N	N	Y	Y	0.6	\$5,000	\$3,000	L	L
78538	Recontour		N	N	Y	Y	0.5	\$5,000	\$2,500	L	L

Table D.44: Watershed road improvements

Road Number	Improvement Level	Description/Comments	Alternative				Units	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
233A – site id 3	Minor reconstruction	Road involves private land and mining access. Site at mp 0.18. See also improvements at two stream crossings. High flows (Quartz Creek) run out of bar and down rd to private residences.	Y	Y	Y	Y	1 site	\$10,000	\$10,000	M	H
9836	Moderate reconstruction	This road is in bad shape and leads to Crooked River. Varying (w/ alt) lengths will be reconstructed for timber haul. Watershed improvement needs 1 st 3.4 miles. See also rd-trail conversion under rd decom.	Y	Y	Y	Y	3.4 mi	\$3,000	\$10,200	H	H
9838A	Minor reconstruction	Spurs off main road are heavily used by ATV's creating large gullies and are high concern for sediment transportation. Decrease sediment transportation. Haul route.	Y	Y	Y	Y	1.11 mi	\$1,000	\$1,110	L	M
9848	Minor reconstruction	Improve drainage with cross drains and spot gravel; improve stream crossings; recommend decommissioning sediment trap (mp 3.17); stabilize slump (mp 3.2) above sediment trap; cost share with minerals program	N	N	N	Y	3.4 mi	\$1,000	\$3,400	L	M
9848B	Maintenance	Improve drainage with cross drains; possible rd-trail conversion (has current ATV use); coord w/ recreation	N	N	N	Y	1.1 mi	\$1,000	\$1,100	L	M

Table D.45: Stream crossing improvements

Road Number	Crossing Number	Stream	Description/Comments	Alternative				Units (sites)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
				B	C	D	E					
233	2092	Baker Gulch	36" culvert; shallow fill; replacement for hydraulics and fish passage; county road (discretionary).	N	N	N	Y	1	\$70,000	\$70,000	H	H
233	2136	Rainbow Gulch	24" culvert; shallow fill; replacement for hydraulics and fish passage; county road (discretionary).	N	N	N	Y	1	\$50,000	\$50,000	H	H
233A	2340	Quartz Creek	Old bridge laying in channel; remove bridge; harden and improve existing ford; near private land; see also watershed rd improvements.	Y	Y	Y	Y	1	\$10,000	\$10,000	H	H
233A	2341	Quartz Creek	Same as 2340	Y	Y	Y	Y	1	\$10,000	\$10,000	H	H
9836	2205	Sawmill Creek	18" culvert; shallow fill; replacement for hydraulics; on haul route	N	N	Y	<u>Y</u>	1	\$5,000	\$5,000	L	M
9836	2243	Unnamed trib to Crooked River	18" culvert; 10' fill depth; replacement for hydraulics; on haul route	N	N	N	<u>Y</u>	1	\$5,000	\$5,000	L	L
9836B	2285	Unnamed trib to Silver Creek	18" culvert; 20' fill depth; inlet ripped, culvert partially mashed; replacement for hydraulics; recommend decommissioning from crossing to end of road	Y	Y	Y	Y	1	\$5,000	\$5,000	M	M
9838	2335	Unnamed trib to Silver Creek	48" culvert; recommend replacement with pipe arch; evaluate for fish passage (cost includes passage provisions)	N	N	N	Y	1	\$120,000	\$120,000	L	L
9848	2371	Unnamed trib to Crooked River	Designed as temporary sediment trap; decommission sediment trap and replace pipe for hydraulics.	Y	Y	Y	Y	1	\$15,000	\$15,000	M	H

Table D.46: Instream Improvement Projects

Project Name	Stream Name	Description/Comments	Alternative				Units (miles)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
Middle Crooked River Habitat Improvement Maintenance – site id 6	Crooked River (Relief Creek to Fivemile)	Riparian planting and maintenance of existing improvements. Includes stabilization of fillslope on private land and Baker Gulch side channel maintenance.	Y	Y	Y		2.8	\$25,000	\$70,000	H	H
						Y	2.8	\$50,000	\$140,000		
Crooked River near Silver Creek – site id 7	Crooked River (Fivemile to Orogrande)	New fish habitat improvements on 0.8 miles of stream. Work includes adding stream meanders, floodplain creation, large woody debris placement, and riparian planting.	N	Y	Y		0.8	\$50,000	\$40,000	M	H
						Y	0.8	\$200,000	\$160,000		
Baker Gulch – site id 8	Baker Gulch Creek	Reconnect channel mouth to Crooked River to restore stream connectivity.	Y	Y	Y	Y	0.02	NA	\$10,000	H	H
Rainbow Gulch – site id 9	Rainbow Gulch Creek	Reconnect channel mouth to Crooked River to restore stream connectivity.	Y	Y	Y	Y	0.02	NA	\$10,000	H	H
Quartz Creek Riparian Planting – site id 10	Quartz Creek	Plant RHCA along harvest unit.	Y	Y	Y	Y	1.0	\$6,000	\$6,000	L	H

Table D.47: Recreation and Trail Improvement Projects

Project Name	Location	Description/Comments	Alternative				Units (ac/mi)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
Trail 807 – site id 12	Near Fivemile Campground	Trail is very steep and rutting, was rebuilt, but still dangerous for the user. Surface erosion to ephemeral channel during rainstorm and snowmelt events. Decrease surface erosion and rutting on steep section, decrease sediment routing to ephemeral channel. User-created trail also associated with this trail.	N	N	N	Y	1.5 mi	\$5,000	\$7,500	M	M
Crooked River Camp-grounds – site id 10	Upstream of Orogrande above Road #233	Crooked River Campgrounds above Orogrande and ATV raceway” 15’ wide x 100’ long. Manage sites to restrict motorized use to designated areas, improve soil productivity, reduce erosion and sediment delivery into Crooked River.	N	Y	Y	Y	5 ac	\$5,000	\$25,000	M	M
Crooked River Camp-grounds – site id 10	Upstream of Orogrande above Road #233	Crooked River Campgrounds above Orogrande and ATV raceway” 15’ wide x 100’ long. Manage sites to restrict motorized use to designated areas, improve soil productivity, reduce erosion and sediment delivery into Crooked River.	N	Y	Y	Y	5 ac	\$5,000	\$25,000	M	M
Old Orogrande Hotel – site id 9	At Old Orogrande near confluence of West and East Forks of Crooked River	Control parking on meadow adjacent to Road #233 and across from historic hotel, decompact and seed area, designate parking with boulders. Decrease soil compaction, erosion, sediment delivery, and invasion of weeds. Construct sanitation facilities.	N	Y	Y	Y	2 ac	\$10,000	\$20,000	M	M
Unauthorized Bridge on Quartz Creek	Upper Quartz Creek NE NW Sec 18. End of FS Road # 9848B	User-built bridge to cross the headwaters of Quartz Creek. Use associated with recreation within the Diamond Hitch Mine Prospects and accesses road system closed to motorized use, except for snowmobiles. Remove bridge and restore site.	Y	Y	Y	Y	0.1 ac	NA	\$2,000	L	M

Project Name	Location	Description/Comments	Alternative				Units (ac/mi)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
Unauthorized ATV trail connects FS Road # 9848B with FS Road # 9838 – site id 3	Trail Originates from the end of the 9848B Road and travels upslope to the end of the 9838 road.	Trail is deeply rutted in places. Active erosion from trail into Quartz Creek. Trail accesses road system closed to motorized use, except for snowmobiles. Rehabilitate trail and manage access.	Y	Y	Y	Y	0.2 mi	\$10,000	\$2,000	L	H
Private ATV Access to the Quartz Creek ATV Loop – site id 21	Private road access north out of Orogrande.	The public is using a road accessing private land to reach FS Rd # 9838A, which is closed to motorized access, except for snowmobiles. Manage road as access to private land and restrict unauthorized use of Rd #9838A.	Y	Y	Y	Y	0.5 mi	\$10,000	\$5,000	M	H

Table D.48: Mine Site Restoration

Project Name	Location	Description/Comments	Alternative				Units (acres)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
Pond and mine site near Petsite. site id 8	Head of tributary in Quartz Creek the NWSW Sec 7	Old pond at the head of the trib, accessed by old road, pond overflow eroding, wetland damage, old mine site. Drain and recontour pond, recontour road into mine site. Restore wetland, clean up mine site. Decrease sediment overflowing out of pond into wetland. Decrease erosion from road into trib, restore wetland	N	N	N	Y	2	\$5,000	\$10,000	L	M
Diamond Hitch – site id 1	End of Road #9848B in Quartz Creek	Test adit seepage and mine tailings for metals.	Y	Y	Y	Y	5	\$1,000	\$5,000	L	M
Unnamed Mine #1 – site id 7	On Quartz Creek 0.2 miles upstream from mouth near end of Road #233A	Restore and stabilize tailings in and adjacent to Quartz Creek. Test adit seepage and mine tailings for metals.	Y	Y	Y	Y	1	\$5,000	\$5,000	L	M

Project Name	Location	Description/Comments	Alternative				Units (acres)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
Unnamed Mine #2 – site id 6	On Quartz Creek 0.17 miles upstream from mouth along Road #233A.	Restore and stabilize placer mining site.	Y	Y	Y	Y	1	\$5,000	\$5,000	L	M

Table D.49: Soil Restoration Projects

Stand Number	Adjacent Road Number	Description/Comments	Alternative				Units (acres)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
83102023	1803	RECONTOUR 2 SKID TRAILS AND LANDING	N	N	N	Y	.4	2260	1000		L
83102019	1803	Recontour skid trail	N	N	N	Y	.1	2260	500		L
83102026	1803	Recontour skid trail system and fireline	N	N	N	Y	.4	2260	1000		L
83102066	1803	Recontour skid trail	N	N	N	Y	.2	2260	500		M
83102069	1803	Recontour skid trail	N	N	N	Y	.3	2260	700		M
83102028	1803	Recontour skid trail	N	N	N	Y	.5	2260	1100		M
83102029	1803	Recontour 2 skid trails	N	N	N	Y	.6	2260	1400		M
83102008	1803	Recontour 2 skid trails	N	N	N	Y	.4	2260	900		M
83102038	77325	Recontour 2 skid trails	N	N	N	Y	.5	2260	1100		M
83101005	78514	Recontour skid trail	N	N	Y	Y	.2	2260	500		H
83101005	78514	Recontour landing	N	N	Y	Y	.2	2260	500		H
83102002	78534	Recontour landing	N	N	Y	Y	.2	2260	500		H
83102002	78534	Recontour skid trail	N	N	Y	Y	.1	2260	300		H
83101050	78538	Recontour skid trail	N	N	Y	Y	.1	2260	500		M
83101061	9833	Recontour trail	Y	Y	N	Y	.5	2260	1100		H
83101061	9833	Recontour landing	Y	Y	N	Y	.2	2260	500		H
83101053	9833	Recontour temp road	Y	Y	Y	Y	.6	2260	1400		H
83101046	9836	Recontour skid trail	Y	Y	Y	Y	.6	2260	1300	H	H

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Stand Number	Adjacent Road Number	Description/Comments	Alternative				Units (acres)	Unit Cost	Cost	Priority 5 th Code	Priority 6 th Code
			B	C	D	E					
83101042	9836	Recontour skid trail	Y	Y	Y	Y	.7	2260	1600	H	H
83101041	9836	Recontour skid trail	Y	Y	Y	Y	.4	2260	1000	H	H
83101004	9836	Recontour 2 skid trails	Y	Y	Y	Y	.2	2260	1000	H	H
83101002	9836	Recontour skid trail	Y	Y	Y	Y	.2	2260	500	H	H
83102001	9836B	Recontour 2 skid trails	N	Y	Y	Y	.8	2260	1800	M	H
83102017	9836B1	Recontour landing	N	Y	Y	Y	.2	2260	500	M	H
83102001	9836C	Recontour skid trail	N	Y	Y	Y	.5	2260	1100	M	M
83102082	9838A	Recontour legacy temporary road	Y	Y	Y	Y	1.2	2260	3100	M	H
83102064	9838	Recontour unclassified road and landing	N	Y	Y	Y	1.0	2260	2260	L	H
83103010	9838	Recontour unclassified road	N	Y	Y	Y	.4	2260	1000	M	H
83103007	9838	Recontour unclassified road	N	N	N	Y	.8	2260	1300	M	H
83102058	9838	Recontour skid trail	N	N	N	Y	.2	2260	500	L	L
83103018	9838	Recontour skid trails	N	N	N	Y	.2	2260	700	L	L
83103028	9838	Recontour 2 skid trails	N	N	N	Y	.4	2260	1400	L	L

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